

## IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

### *Listing of Claims*

1. (Canceled)
2. (Currently Amended) A method for bandwidth scheduling according to claim [[1]] 5, 8, 10, 12, 15, 19, 20, or 22, wherein the stream of data includes identifiable data packets:  
subjecting each data packet to a decision making algorithm in the bandwidth scheduler resulting in that the data packet is accepted or rejected.
3. (Canceled)
4. (Canceled)
5. (Currently Amended) A method for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the method comprising the steps of:  
receiving a stream of data from the switching fabric;  
extracting flow identity information from the stream;  
updating counters corresponding to the stream; and  
subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 4,  
wherein the flow identity information includes port, identified by port number, and traffic class, and  
wherein a limit (BWP<sub>max</sub>) is set on the maximum accepted bandwidth per port and

wherein a virtual queue is associated with each port by means of a counter VQLP (virtual queue length of port) and the counter VQLP is increased with the packet length for each accepted packet and updated by subtracting the configuration parameter  $BWP_{max}$  (maximum accepted bandwidth per port) each time unit.

6. (Original) A method for bandwidth scheduling according to claim 5, wherein, if the counter  $VQLP < a$  constant, a flag is set to a value used by the algorithm in deciding to accept or reject a packet.

7. (Canceled)

8. (Currently Amended) A method for bandwidth scheduling **in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the method comprising the steps of:**

**receiving a stream of data from the switching fabric;**

**extracting flow identity information from the stream;**

**updating counters corresponding to the stream; and**

**subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 7,**

**wherein the flow identity information includes port, identified by port number, and traffic class, and**

**wherein a limit ( $BWTC_{max}$ ) is set on the maximum accepted bandwidth per traffic class, and**

wherein a virtual queue is associated with each traffic class by means of a counter VQLTC (virtual queue length per traffic class) and the counter VQLTC is increased with the packet length for each accepted packet and updated each time unit by subtracting the configuration parameter  $BWTC_{max}$ .

9. (Original) A method for bandwidth scheduling according to claim 8, wherein, if the counter  $VQLTC < a$  constant, a flag is set to a value used by the algorithm in deciding to accept or reject a packet.

10. (Currently Amended) A method for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the method comprising the steps of:

receiving a stream of data from the switching fabric;

extracting flow identity information from the stream;

updating counters corresponding to the stream; and

subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 3,

wherein the flow identity information includes port, identified by port number, and traffic class, and

wherein a counter TC (traffic class) is increased with the packet length when the traffic class accepts a packet, and a variable  $TCP_{max}$  (traffic class port maximum) is set to a value equal to the maximum of the TC counters for the port in question, wherein, for a traffic class having the ratio  $TC/TCP_{max} < a$  constant, a flag is set to a value used by the algorithm in deciding to accept or reject a packet, whereby the bandwidth is distributed in accordance with the Max-Min algorithm.

11. (Canceled)

12. (Currently Amended) A method for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the method comprising the steps of:

receiving a stream of data from the switching fabric;

extracting flow identity information from the stream;

- updating counters corresponding to the stream; and  
subjecting the stream to a decision making algorithm in the bandwidth scheduler  
based on the extracted flow identity information and the updated counters for that  
particular stream resulting in that the stream is accepted or rejected before said stream  
enters any queue of said switch according to claim 11,  
wherein the flow identity information includes port, identified by port number, and  
traffic class, and  
wherein each traffic class is guaranteed a bandwidth up to a limit  $(BWTC_{min})_i$  and  
 wherein a counter TC (traffic class) is increased with the packet length when the traffic  
 class accepts a packet and is updated each time unit by subtracting the configuration parameter  
 $BWTC_{min}$  (bandwidth per traffic class minimum).
13. (Original) A method for bandwidth scheduling according to claim 10, wherein a weight  
 WTC (weight traffic class) is associated with each traffic class, so that the algorithm  
 automatically prioritizes certain traffic classes.
14. (Original) A method for bandwidth scheduling according to claim 13, wherein the  
 counter TC (traffic class) is increased with the packet length multiplied by the configuration  
 parameter WTC (weight traffic class), when the traffic class accepts a packet, and the counter TC  
 is updated each time unit by subtracting a configuration parameter  $BWTC_{min}$  (bandwidth per  
 traffic class minimum) multiplied by the configuration parameter WTC.
15. (Currently Amended) A method for bandwidth scheduling in a switch comprising a  
switching fabric, and a bandwidth scheduler located before any queue of said switch, the  
method comprising the steps of:  
receiving a stream of data from the switching fabric;  
extracting flow identity information from the stream;  
updating counters corresponding to the stream; and  
subjecting the stream to a decision making algorithm in the bandwidth scheduler  
based on the extracted flow identity information and the updated counters for that

particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 3,

wherein the flow identity information includes port, identified by port number, and traffic class, and

wherein, for each traffic class, a counter BL (backlogging) keeps track of how many packets are accepted in relation to the other traffic classes, so that if a previously idle traffic class becomes active, the traffic class is compensated by distributing more bandwidth to this traffic class.

16. (Original) A method for bandwidth scheduling according to claim 15, wherein a variable  $BLP_{max}$  (backlogging port max) stores the maximum of the backlogging counters for the traffic classes of each port, and, for a traffic class with the ratio  $BL/BLP_{max} < \text{a constant}$ , a flag is set to a value used by the algorithm in deciding to accept or reject a packet.

17. (Original) A method for bandwidth scheduling according, to claim 16, wherein the BL counter is increased with the packet length multiplied by a configuration parameter WTC (weight traffic class), when the traffic class accepts a packet, and said counter BL is limited to a fixed upper value and a fixed lower value, and if one backlogging counter for a traffic class reaches the upper limit, all other counters are decreased in order to maintain the internal difference, and if one backlogging counter for a flow reaches the lower limit, this counter remains at the lower limit and the counter BL is updated each time unit by subtracting a configuration parameter  $BWT_{min}$  (minimum bandwidth per traffic class) multiplied by the configuration parameter WTC.

18. (Canceled)

19. (Currently Amended) A method for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the method comprising the steps of:

receiving a stream of data from the switching fabric;

extracting flow identity information from the stream;  
updating counters corresponding to the stream; and  
subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 18,  
wherein the flow identity information includes port, identified by port number, and traffic class, and  
wherein, if one traffic class is particularly aggressive or active, it is forced to give up a part of its accepted bandwidth and

wherein, when a packet is accepted in a traffic class having the maximum accepted bandwidth ( $TC = TCP_{max}$ ), a charity function forces the packet to be discarded and a counter charity (CH) is increased with a configurable fraction of the accepted packet length (+packet length x give factor), and when a packet is rejected in one of the other traffic classes, the charity function forces the packet to be accepted and the clarity counter (CH) is decreased with the packet length multiplied with the weight of the respective traffic class (-packet length x WTC), and the counter (CH) is updated each time unit by multiplication with a decay factor.

20. (Currently Amended) A method for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the method comprising the steps of:

receiving a stream of data from the switching fabric;  
extracting flow identity information from the stream;  
updating counters corresponding to the stream; and  
subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 3,  
wherein the flow identity information includes port, identified by port number, and traffic class, and, wherein:

a limit ( $BWP_{max}$ ) is set on the maximum accepted bandwidth per port, a virtual queue is associated with each port, and a flag is set in dependence of the port queue length;

a limit ( $BWTC_{max}$ ) is set on the maximum accepted bandwidth per traffic class, a virtual queue is associated with each traffic class, and a flag is set in dependence of the traffic class queue length;

the bandwidth is distributed in accordance with the Max-Min algorithm;

each traffic class is guaranteed a bandwidth up to a limit ( $BWTC_{min}$ );

a weight (WTC) is associated with each traffic class, so that the algorithm automatically prioritizes certain traffic classes;

for each traffic class, a backlogging counter (BL) keeps track of how many packets are accepted in relation to the other traffic classes, so that if a previously idle traffic class becomes active, the traffic class is compensated by distributing more bandwidth to this traffic class;

if one traffic class is particularly aggressive or active, it gives up a part of its accepted bandwidth.

21. (Canceled)

22. (Currently Amended) A method for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the method comprising the steps of:

receiving a stream of data from the switching fabric;

extracting flow identity information from the stream;

updating counters corresponding to the stream; and

subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 24,

wherein the flow identity information includes port, identified by port number, and traffic class, and.

**wherein flows are grouped together by means of a hash function into a set of flow groups, and**

wherein a counter FG (flow group) is increased with the packet length when the flow group accepts a packet, and a variable  $FG_{max}$  (flow group maximum) is set to a value equal to the maximum of the FG counters for the traffic class in question, and wherein, for a flow group having the ratio  $FG/FG_{max} < a$  constant, a flag is set to a value used by the algorithm in deciding to accept or reject a packet, whereby the bandwidth is distributed in accordance with the Max-Min algorithm.

23. (Original) A method for bandwidth scheduling according to claim 22, wherein:
- a limit ( $BWP_{max}$ ) is set on the maximum accepted bandwidth per port, a virtual queue is associated with each port, and a flag is set in dependence of the port queue length;
  - a limit ( $BWTC_{max}$ ) is set on the maximum accepted bandwidth per traffic class, a virtual queue is associated with each traffic class, and a flag is set in dependence of the traffic class queue length;
  - each traffic class is guaranteed a bandwidth up to a limit ( $BWTC_{min}$ );
  - a weight (WTC) is associated with each traffic class, so that the algorithm automatically prioritizes certain traffic classes;
  - for each traffic class, a backlogging counter (BL) keeps track of how many packets are accepted in relation to the other traffic classes, so that if a previously idle traffic class becomes active, the traffic class is compensated by distributing more bandwidth to this traffic class;
  - if one traffic class is particularly aggressive or active, it gives up a part of its accepted bandwidth.
24. (Original) A method for bandwidth scheduling according to claim 6, 9, 10, 12, 14, 17, or 19, wherein flows are grouped together by means of a hash function into a set of flow groups, and a counter FG (flow group) is increased with the packet length when the flow group accepts a packet, and a variable  $FG_{max}$  (flow group maximum) is set to a value equal to the maximum of the FG counters for the traffic class in question, and wherein, for a flow group having the ratio



$FG/FG_{\max} < \text{a constant}$ , a flag is set to a value used by the algorithm in deciding to accept or reject a packet, whereby the bandwidth is distributed in accordance with the Max-Min algorithm.

25. (Original) A method for bandwidth scheduling according to claim 23, wherein the flags set by the algorithm logic are used in a decision sequence comprising:

- if port is switched off, then reject, otherwise;
- if Flow Groups are enabled and Flow Group is fair, then accept, otherwise;
- if queue (VQLP, VQLTC) longer than Discard Wanted (= desired maximum length), then reject, otherwise if Flow Groups are enabled and queue (VQLP, VQLTC) longer than DiscardPreferred (= preferred maximum length), and the most aggressive Flow Group, then reject, otherwise
- if Traffic Classes are enabled and Traffic Class is fair, then accept, otherwise;
- if queue (VQLP, VQLTC) longer than DiscardPreferred (= preferred maximum length), then reject, otherwise:
- accept.

26. (Canceled)

27. (Canceled)

28. (Canceled)

29. (**Currently Amended**) An arrangement for bandwidth scheduling according to claim [[28]] 32, 35, 37, 39, 42, 46, 47, or 49, wherein the stream of data includes identifiable data packets; and further comprising

means for subjecting each data packet to a decision making algorithm in the bandwidth scheduler resulting in that the data packet is accepted or rejected.

30. (Canceled)

31. (Canceled)

32. (Currently Amended) An arrangement for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the arrangement comprising:

means for receiving a stream of data from the switching fabric;

means for extracting flow identity information from the stream;

means for updating counters corresponding to the stream; and

means for subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch ~~according to claim 34.~~

wherein the flow identity information includes port, identified by port number, and traffic class, and,

wherein a limit ( $BWP_{max}$ ) is set on the maximum accepted bandwidth per port, and

wherein a virtual queue is associated with each port by means of a counter VQLP (virtual queue length of port) and the counter VQLP is increased with the packet length for each accepted packet and updated by subtracting the configuration parameter  $BWP_{max}$  (maximum accepted bandwidth per port) each time unit.

33. (Original) An arrangement for bandwidth scheduling according to claim 32, wherein, if the counter VQLP < a constant, a flag is set to a value used by the algorithm in deciding to accept or reject a packet.

34. (Canceled)

35. (Currently Amended) An arrangement for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the arrangement comprising:

means for receiving a stream of data from the switching fabric;

means for extracting flow identity information from the stream;  
means for updating counters corresponding to the stream; and  
means for subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 34,

wherein the flow identity information includes port, identified by port number, and traffic class, and,

wherein a limit ( $BWTC_{max}$ ) is set on the minimum accepted bandwidth per traffic class, and

wherein a virtual queue is associated with each traffic class by means of a counter VQLTC (virtual queue length per traffic class) and the counter VQLTC is increased with the packet length for each accepted packet and updated each time unit by subtracting the configuration parameter  $BWTC_{max}$ .

36. (Original) An arrangement for bandwidth scheduling according to claim 35, wherein, if the counter VQLTC < a constant, a flag is set to a value used by the algorithm in deciding to accept or reject a packet.

37. (Currently Amended) An arrangement for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the arrangement comprising:

means for receiving a stream of data from the switching fabric;  
means for extracting flow identity information from the stream;  
means for updating counters corresponding to the stream; and  
means for subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 30,

**wherein the flow identity information includes port, identified by port number, and traffic class, and**

wherein a counter TC (traffic class) is increased with the packet length when the traffic class accepts a packet, and a variable  $TCP_{max}$  (traffic class port maximum) is set to a value equal to the maximum of the TC counters for the port in question, and wherein, for a traffic class having the ratio  $TC/TCP_{max} < a$  constant, a flag is set to a value used by the algorithm in deciding to accept or reject a packet, whereby the bandwidth is distributed in accordance with the Max-Min algorithm.

38. (Canceled)

39. (Currently Amended) An arrangement for bandwidth scheduling **in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the arrangement comprising:**

**means for receiving a stream of data from the switching fabric;**

**means for extracting flow identity information from the stream;**

**means for updating counters corresponding to the stream; and**

**means for subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 38,**

**wherein the flow identity information includes port, identified by port number, and traffic class, and**

**wherein each traffic class is guaranteed a bandwidth up to a limit ( $BWTC_{min}$ ), and**

wherein a counter TC (traffic class) is increased with the packet length when the traffic class accepts a packet and is updated each time unit by subtracting the configuration parameter  $BWTC_{min}$  (bandwidth per traffic class minimum).

40. (Original) An arrangement for bandwidth scheduling according to claim 37, wherein a weight WTC (weight traffic class) is associated with each traffic class, so that the algorithm automatically prioritises certain traffic classes,

41. (Original) An arrangement for bandwidth scheduling according to claim 40, wherein the counter TC (traffic class) is increased with the packet length multiplied by the configuration parameter WTC (weight traffic class), when the traffic class accepts a packet, and the counter TC is updated each time unit by subtracting a configuration parameter BWTC<sub>min</sub> (bandwidth per traffic class minimum) multiplied by the configuration parameter WTC.

42. (Currently Amended) An arrangement for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the arrangement comprising:

means for receiving a stream of data from the switching fabric;

means for extracting flow identity information from the stream;

means for updating counters corresponding to the stream; and

means for subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 39,

wherein the flow identity information includes port, identified by port number, and traffic class, and

wherein, for each traffic class, a counter BL (backlogging) keeps track of how many packets are accepted in relation to the other traffic classes, so that if a previously idle traffic class becomes active, the traffic class is compensated by distributing more bandwidth to this traffic class.

43. (Original) An arrangement for bandwidth scheduling according to claim 42, wherein a variable BLP<sub>max</sub> (backlogging port max) stores the maximum of the backlogging counters for the

traffic classes of each port, and, for a traffic class with the ratio  $BL/BLP_{max} < a$  constant, a flag is set to a value used by the algorithm in deciding to accept or reject a packet.

44. (Original) An arrangement for bandwidth scheduling according to claim 43, wherein the counter BL is increased with the packet length multiplied by a configuration parameter WTC (weight traffic class), when the traffic class accepts a packet, and said counter BL is limited to a fixed upper value and a fixed lower value, and if one backlogging counter for a traffic class reaches the upper limit, all other counters are decreased in order to maintain the internal difference, and if one backlogging counter for a flow reaches the lower limit, this counter will remain at the lower limit and the counter BL is updated each time unit by subtracting a configuration parameter  $BWTC_{min}$  (minimum bandwidth per traffic class) multiplied by the configuration parameter WTC.

45. (Canceled)

46. (Currently Amended) An arrangement for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the arrangement comprising:

means for receiving a stream of data from the switching fabric;

means for extracting flow identity information from the stream;

means for updating counters corresponding to the stream; and

means for subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 45,

wherein the flow identity information includes port, identified by port number, and traffic class, and

wherein, if one traffic class is particularly aggressive or active, it is forced to give up a part of its accepted bandwidth, and

wherein when a packet is accepted in a traffic class having the maximum accepted bandwidth ( $TC = TCP_{max}$ ), a charity function forces the packet to be discarded and a counter charity (CH) is increased with a configurable fraction of the accepted packet length (+packet length x give factor), and when a packet is rejected in one of the other traffic classes, the charity function forces the packet to be accepted and the charity counter (CH) is decreased with the packet length multiplied with the weight of the respective traffic class (-packet length x WTC), and the counter (CH) is updated each time unit by multiplication with a decay factor.

47. **(Currently Amended)** An arrangement for bandwidth scheduling **in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the arrangement comprising:**

**means for receiving a stream of data from the switching fabric;**

**means for extracting flow identity information from the stream;**

**means for updating counters corresponding to the stream; and**

**means for subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 39,**

**wherein the flow identity information includes port, identified by port number, and traffic class, and** wherein:

a limit ( $BWP_{max}$ ) is set on the maximum accepted bandwidth per port, a virtual queue is associated with each port, and a flag is set in dependence of the port queue length;

a limit ( $BWTC_{max}$ ) is set on the maximum accepted bandwidth per traffic class, a virtual queue is associated with each traffic class, and a flag is set in dependence of the traffic class queue length;

the bandwidth is distributed in accordance with the Max-Min algorithm;

each traffic class is guaranteed a bandwidth up to a limit ( $BWTC_{min}$ );

a weight (WTC) is associated with each traffic class, so that the algorithm automatically prioritizes certain traffic classes;

for each traffic class, a backlogging counter (BL) keeps track of how many packets are accepted in relation to the other traffic classes, so that if a previously idle traffic class becomes active, the traffic class is compensated by distributing more bandwidth to this traffic class;

if one traffic class is particularly aggressive or active, it gives up a part of its accepted bandwidth.

48. (Canceled)

49. (Currently Amended) An arrangement for bandwidth scheduling in a switch comprising a switching fabric, and a bandwidth scheduler located before any queue of said switch, the arrangement comprising:

means for receiving a stream of data from the switching fabric;

means for extracting flow identity information from the stream;

means for updating counters corresponding to the stream; and

means for subjecting the stream to a decision making algorithm in the bandwidth scheduler based on the extracted flow identity information and the updated counters for that particular stream resulting in that the stream is accepted or rejected before said stream enters any queue of said switch according to claim 48,

wherein the flow identity information includes port, identified by port number, and traffic class, and

wherein flows are grouped together by means of a hash function into a set of flow groups, and

wherein a counter FG (flow group) is increased with the packet length when the flow group accepts a packet, and a variable  $FG_{max}$  (flow group maximum) is set to a value equal to the maximum of the FG counters for the traffic class in question, and wherein, for a flow group having the ratio  $FG/FG_{max} < a$  constant, a flag is set to a value used by the algorithm in deciding to accept or reject a packet, whereby the bandwidth is distributed in accordance with the Max-Min algorithm.



50. (Original) An arrangement for bandwidth scheduling according to claim 49, wherein:

- a limit ( $BWP_{max}$ ) is set on the maximum accepted bandwidth per port, a virtual queue is associated with each port, and a flag is set in dependence of the queue length;
- a limit ( $BWTC_{max}$ ) is set on the maximum accepted bandwidth per traffic class, a virtual queue is associated with each traffic class and a flag is set in dependence of the queue length; each traffic class is guaranteed a bandwidth up to a limit ( $BWTC_{min}$ );
- a weight (WTC) is associated with each traffic class, so that the algorithm automatically prioritizes certain traffic classes;
- for each traffic class, a backlogging counter (EL) keeps track of how many packets are accepted in relation to the other traffic classes, so that if a previously idle traffic class becomes active, the traffic class is compensated by distributing more bandwidth to this traffic class;
- if one traffic class is particularly aggressive or active, it gives up a part of its accepted bandwidth.

51. (Original) An arrangement for bandwidth scheduling according to claim 33, 36, 37, 39, 41, 44, or 46, wherein flows are grouped together by means of a hash function into a set of flow groups, and a counter FG (flow group) is increased with the packet length when the flow group accepts a packet, and a variable  $FG_{max}$  (flow group maximum) is set to a value equal to the maximum of the FG counters for the traffic class in question, and wherein, for a flow group having the ratio  $FG/FG_{max} < \text{a constant}$ , a flag is set to a value used by the algorithm in deciding to accept or reject a packet, whereby the bandwidth is distributed in accordance with the Max-Min algorithm.

52. (Original) An arrangement for bandwidth scheduling according to claim 50, wherein the flags set by the algorithm logic are used in a decision sequence comprising:

- if port is switched off, then reject, otherwise;
- if Flow Groups are enabled and Flow Group is fair, then accept, otherwise;
- if queue (VQLP, VQLTC) longer than DiscardWanted (= desired maximum length), then reject, otherwise

if Flow Groups are enabled and queue (VQLP, VQLTC) longer than  
DiscardPreferred (= preferred maximum length), and the most aggressive Flow Group,  
then reject, otherwise  
if Traffic Classes are enabled and Traffic Class is fair, then accept, otherwise;  
if queue (VQLP, VQLTC) longer than DiscardPreferred (= preferred maximum length),  
then reject, otherwise;  
accept.

53 (Canceled)

54. (Canceled)